World Organisation for Animal Health

David Williams - - AUSTRALIA

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	African swine fever
***Address of laboratory:**	5 Portarlington Road East Geelong Victoria 3219 Australia
***Tel:**	+61 52.27.50.00
***E-mail address:**	d.williams@csiro.au
Website:	https://www.csiro.au/en/about/facilities-collections/acdp
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Debbie Eagles, Director, Australian Centre for Disease Preparedness
***Name (including Title and Position) of WOAH Reference Expert:**	Dr David Williams, Group Leader, Australian Centre of Disease Preparedness
***Which of the following defines your laboratory? Check all that apply:**	Governmental

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
cELISA	Yes	934	137
IFAT	Yes	7	35
Direct diagnostic tests		Nationally	Internationally
Realtime qPCR	Yes	146	138
Sequencing	Yes	0	21
Virus isolation	Yes	5	1

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
ASFV Network Quality Controls	PCR	Produced & provided	5mL	0	1	AUSTRALIA,

ASFV Network Quality Controls	Antibody ELISA	Produced & provided	16mL	0	1	AUSTRALIA,
PCR Control	PCR	Produced & provided	0	1ml	1	NEW ZEALAND,
Polyclonal Antiserum	Antibody ELISA	Produced & provided	0	1ml	1	INDIA,
PCR primers/probe kit	PCR	Provided	0	3 kits (1000 reactions)	1	PAPUA NEW GUINEA,
Antigen ELISA kits	Antigen ELISA	Provided	0	5 kits (5x 480 tests)	1	PAPUA NEW GUINEA,
Antibody ELISA kits	Antibody ELISA	Provided	0	2 kits (2x 480 tests)	1	PAPUA NEW GUINEA,
Antigen rapid test kits	Antigen rapid test	Provided	0	4 kits (4x 100 tests)	1	PAPUA NEW GUINEA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

Yes

Name of WOAH Member Country seeking assistance	Date	Which diagnostic test used	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
PAPUA NEW GUINEA	2025-09-29	Real time PCR, IFAT, Virus Isolation, sequencing	8	0
PAPUA NEW GUINEA	2025-11-05	Real time PCR, IFAT, antibody ELISA	82	0
SOLOMON (ISLANDS)	2025-01-24	IFAT, antibody ELISA	51	0
SOLOMON (ISLANDS)	2025-03-21	Antibody ELISA	27	0
VIETNAM	2025-08-28	Real time PCR, sequencing	0	20
VANUATU	2025-09-07	Antibody ELISA	16	0

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
INDONESIA	i. Advice on extraction methods for PCR testing ii. Advice for AFV genome sequencing	Remotely (emails)
CAMBODIA	Advice and reference sequence dataset for p72 genotyping	Remotely (email/messaging)
PAPUA NEW GUINEA	Advice on diagnostic test protocols and workflows for ELISA and PCR for routine and surveillance activities	Remotely (emails)
VIETNAM	i. Sequence analysis of data produced by member ii. Advice on multiplex PCRs for detecting ASFV recombinants	Remotely (emails)

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
Whole genome sequencing of ASF viruses from Papua New Guinea and Vietnam	1 year	Generate and analyse complete genome sequences for molecular epidemiology analyses	PNG National Animal Health & Quarantine Inspection Authority ; National Center for Veterinary Diagnosis No.II, Vietnam	PAPUA NEW GUINEA VIETNAM
Development of a Protective T Cell Vaccine for ASF	2 years	Immunological studies to investigate T cell responses in ASFV-infected pigs	MBF Therapeutics, USA	UNITED STATES OF AMERICA
Investigation of protective immune responses in Red River Hogs and Warthogs following ASFV infection	2 years	Single cell RNA sequence data analysis of host immune mechanisms	Friedrich-Loeffler-Institut, Germany	GERMANY

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

Yes

Research need : 1

Please type the Research need: Understanding the prevalence and distribution of emerging ASFV genotype I/II recombinants in China, Vietnam and neighbouring countries, supported by: (i) evaluation and validation of real time PCR tests for detecting recombinants; (ii) whole genome sequencing and characterisation. Further knowledge in this area is expected to support molecular diagnostics, vaccine use and future vaccine development and inform our understanding of the genetic diversity and evolution of ASFV in Asia and the Indo-Pacific.

Relevance for WOAH Disease Control, Standard Setting, Facilitation of international collaboration,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics, Vaccines,

Animal Category Terrestrial,

Disease:

African swine fever

Kind of disease (Zoonosis, Transboundary diseases) Transboundary diseases,

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer: Terrestrial Manual Chapter 3.9.1 - AFRICAN SWINE FEVER (INFECTION WITH AFRICAN SWINE FEVER VIRUS)

Notes:

Answer:

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
Molecular epidemiological data for ASFV partial and whole genome sequences derived from samples collected in Papua New Guinea and Vietnam, associated with diagnostic testing (section 10).

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:

The results of molecular typing and phylogenetic analysis using whole genome and partial genes (p72, IGR, CD2v and CVR) were reported to the submitting laboratories in Vietnam and Papua New Guinea.

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

2

1. Jia F, Lynch SE, Williams DT. The Potential of Disabled Infectious Single Cycle (DISC) Virus Platforms for Next Generation African Swine Fever Vaccine Development. Transbound Emerg Dis. 2025 Jul 14;2025:8573171. doi: 10.1155/tbed/8573171. PMID: 40692871; PMCID: PMC12279434.
2. O'Dwyer J, Van HV, Phuong NT, Mileto P, Mercado O, da Conceição F, Jong JBDC, Puana I, Neave MJ, Williams DT. Emergence of Microvariants of African Swine Fever Virus Genotype II in the Asia-Pacific. Transbound Emerg Dis. 2025 Jun 20;2025:9990044. doi: 10.1155/tbed/9990044. PMID: 40585857; PMCID: PMC12204745.

b) International conferences:

5

1. Williams, D. Advances in point of care testing for animal pathogens. International Symposium of the World Association of Veterinary Laboratory Diagnosticians. 12 to 14 Jun 2025, Calgary, Canada.
2. Williams D, O'Dwyer J, Mileto P, Mercado O, Neave M, Puana I. African Swine Fever in the Pacific. Global ASF Research Alliance (GARA) 2025 Scientific Meeting. 28 to 30 April 2025, Rome, Italy.
3. Jansen van Vuren P. African swine fever diagnostics and surveillance. 10th Meeting of the Standing Group of Experts on ASF for Asia and the Pacific, 10-12 June 2025, Bangkok, Thailand.
4. Jansen van Vuren P. Biosecurity for prevention of ASF and TADs – the Australian Centre for Disease Preparedness perspective. 10th Meeting of the Standing Group of Experts on ASF for Asia and the Pacific, 10-12 June 2025, Bangkok, Thailand.
5. Wright Q. Extrinsic TNF-α gene expression is associated with CD4+ T cell Depletion Following African Swine Fever Virus Infection. 14th International Veterinary Immunology Symposium (IVIS) 2025. 11th to 14th August 2025, Vienna, Austria.

c) National conferences:

3

1. Mileto P. Molecular Characterisation of African Swine Fever Virus in the ACDP Sequencing Lab. Australian Association of Veterinary Laboratory Diagnosticians Conference. 27th -28th November, 2025, Perth Australia
2. Williams, D. Advances in point of care testing for animal pathogens. Recent Advances in Emergency Animal Disease Annual Symposium, 12th to 13th November 2025, Geelong, Australia.
3. Reid T. The 'Purpose' of 'Purpose': Principles for validating point-of-care tests for veterinary use. Recent Advances in Emergency Animal Disease Annual Symposium, 12th to 13th November 2025, Geelong, Australia.

d) Other (Provide website address or link to appropriate information):

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 51

b) Seminars : 45

c) Hands-on training courses: 158

d) Internships (>1 month) 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country

C	FIJI	6
C	VANUATU	6
C	PAPUA NEW GUINEA	40
C	LAOS	15
C	PHILIPPINES	21
C	MALAYSIA	4
C	INDONESIA	42
C	VIETNAM	11
C	TIMOR-LESTE	1
C	SINGAPORE	1
C	MYANMAR	1
C	BRUNEI	1
C	CAMBODIA	10
C	THAILAND	1
C	SAMOA	1
C	BRAZIL	1
C	GERMANY	1
C	HUNGARY	1
C	SOUTH AFRICA	2
C	SWITZERLAND	1
C	NEW ZEALAND	2
C	NEW CALEDONIA	15
A	PAPUA NEW GUINEA	33
A	PHILIPPINES	5
A	MALAYSIA	3
A	INDONESIA	10
B	PHILIPPINES	5
B	MALAYSIA	3
B	INDONESIA	10
B	UNITED STATES OF AMERICA	2
B	NEW CALEDONIA	15
B	FIJI	3
B	PAPUA NEW GUINEA	3
B	VANUATU	2
B	NEW ZEALAND	2

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
Integrated Management System (IMS) covering: ISO 9001:2015	ISO 9001:2015	BSI ISO9001 FS 605099-001 NOV 2028.pdf
IMS covering ISO 17025	ISO 17025	NATA ISO 17025 APR 2024.pdf
IMS covering ISO 17043	ISO 17043	NATA ISO 17043 NOV 2022.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ISO 9001:2015	BSI
ISO 17025 As per NATA ISO 17025 scope of accreditation: Accreditation No. 13546 (https://nata.com.au/accredited-organisation/australian-animal-health-laboratory-13546-13539/?highlight=ACDP)	NATA

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

The laboratory has a dedicated Biorisk Management Group (18 Members) who provide specialist advice, monitor and improve Biosafety, Biosecurity and Biocontainment activities and perform annual testing and validation on Biocontainment systems. The team uses a biorisk management approach aligned with ISO 35001 to implement a system of managing biosafety and biosecurity across a wide array of biological hazards. The Biorisk Management Group develop and implement standard operating procedures and institutional policies that set the framework for the handling of biological materials across ACDP and provide ultimate assurance that the laboratory activities pose negligible danger to Australia's agriculture or public health. Policies and procedures are contained in the annually reviewed ACDP Biorisk Manual consisting of various sections as follows. • Section 1 Administration • Section 2 PC2 Procedures and Policies • Section 3 PC3 Procedures and Policies • Section 4 PC4 Procedures and Policies • Section 5 Large Animal Facility (LAF) Procedures and Policies • Section 6 Personnel and Procedural Controls • Section 7 Transport and Storage of Biological Material • Section 8 Movement of Material, Equipment and Waste • Section 9 Engineering Procedures and Polices • Section 10 Microbiological Incident Response Procedures and Policies The ACDP biological risk management system has clear and unequivocal commitment by laboratory management, who ensure that roles, responsibilities, resources and authorities related to biological risk management are defined, documented, and communicated to those who manage, perform, and verify work associated with biological agents and toxins in the laboratory. The Biorisk Management Team are audited over 3 days every 6 months by an external security assessment team to provide an independent review of elements affecting ACDP's microbiological and physical security operations and to advise CSIRO senior executive management of any areas of concern or risk. Biosafety and biosecurity operations are also audited frequently by Australia's regulatory agencies, the Department of Agriculture, Fisheries and Forestry (DAFF), the Office of the Gene Technology Regulator (OGTR) and the Security Sensitive Biological Agents Regulatory Scheme (SSBA).

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
2025-01 ASF RL Network meeting	2025-02-24	Online	Short communications	Co-chair, participation in discussion on agenda items and updates
Side Meeting of ASF RL Network at GARA Scientific Meeting	2025-04-27	Rome, Italy	Short communications	Chair, participation in discussion on agenda items and updates
Planning meeting for the WOAH-BioPrevail meeting at ISWAVLD	2025-05-07	Online	Short communications	Participation in discussions on planning and roles
2025-02 ASF RL Network meeting	2025-05-12	Online	Short communications	Co-chair, participation in discussion on agenda items and updates

International Symposium of the World Association of Veterinary Laboratory Diagnosticians - WOAH-BioPrevail Meeting	2025-06-12	Calgary, Canada	Speaker and panelist	Disease Detection in a Changing World; Advances in point of care testing for animal pathogens
10th Meeting of the Standing Group of Experts on ASF for Asia and the Pacific	2025-06-09	Bangkok, Thailand	Speaker	African swine fever diagnostics and surveillance
2025-03 ASF RL Network meeting	2025-08-18	Online	Short communications	Co-chair, participation in discussion on agenda items and updates
2025-04 ASF RL Network meeting	2025-11-18	Online	Short communications	Co-chair, participation in discussion on agenda items and updates
10th Meeting of the Standing Group of Experts on ASF for Asia and the Pacific	2025-06-09	Bangkok, Thailand	Speaker	Biosecurity for prevention of ASF and TADs – the Australian Centre for Disease Preparedness perspective

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?

Yes

24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
African Swine Fever Reference Laboratory Network	Participant and co-chair	17	National Centre for Foreign Animal Disease, CFIA , Canada; National Surveillance and Research Center for Exotic Animal Diseases China Animal Health and Epidemiology Center; Onderstepoort Veterinary Institute, Agricultural Research Council, Onderstepoort, South Africa; National Veterinary Services Laboratories, USDA, USA; The Pirbright Institute, Pirbright, UK; Friedrich-Loeffler-Institut, Germany; Centro de Investigación en Sanidad Animal (CISA)/Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA) del Consejo Superior de Investigaciones Científicas (CSIC), Spain; Federal Center for Animal Health, Russia.

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAH Ref. Labs/ organising WOAH Ref Lab
XXII ASF Inter-laboratory Comparison Test (ILCT) 2024-2025	Participant	Approx. 30	Spain

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Detection of ASF antibodies using an ELISA commercial kit as part of the Laboratories Emergency Animal Disease Diagnosis and Response (LEADDR) Network	Organiser and Participant	8	Antibody ELISA	AUSTRALIA,
Molecular PCR detection of ASF as part of the Laboratories Emergency Animal Disease Diagnosis and Response (LEADDR) Network	Organiser and Participant	8	Real-time PCR	AUSTRALIA,
Harmonising existing test methods for PCR detection of ASF through the Asia Pacific Regional Proficiency Testing Swine Disease PCR Panel	Organiser and Participant	29	Real-time PCR	AUSTRALIA, BHUTAN, CAMBODIA, CHINESE TAIPEI, HONG KONG, INDIA, INDONESIA, KOREA (REP. OF), MALAYSIA, NEPAL, NEW CALEDONIA, PHILIPPINES, THAILAND, VIETNAM,

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

Yes

Kind of consultancy	Location	Subject (facultative)
WOAH ASF Reference Laboratory network	Online	Agenda items including WOAH ASF vaccine standards, point-of-care testing, ASFV genomics platform, proficiency testing, laboratroty training, meetings update, activities of the members
Subject matter expert for 10th Meeting of the Standing Group of Experts on ASF for Asia and the Pacific, 10-12 June 2025	Bangkok, Thailand	ASF diagnostics, surveillance and laboratory biosecurity
WOAH-BioPrevail Meeting at the International Symposium of the World Association of Veterinary Laboratory Diagnosticians, 13th June 2025	Calgary, Canada	Disease Detection in a Changing World; Advances in point of care testing for animal pathogens

29. Additional comments regarding your report:

No